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Adam Leslie Clark

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EXAMINER

XU, KEVIN K

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/771,097	Applicant(s) CLARK, ADAM LESLIE	
	Examiner KEVIN K. XU	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/17/08 have been fully considered but they are not persuasive. Specifically applicant has amended claim 1 to recite "...wherein each pixel is represented by an entry in the table, and wherein the entry includes a dominant pixel color component..." and has subsequently argued that Satoh (6597815) fails to teach this limitation. Examiner respectfully disagrees. It should be noted that Satoh teaches dequantizing each decoded data $D(i, j)$ (corresponding to each pixel value in frequency domain) with quantization levels $Q(i, j)$ (Fig. 6) included in the quantization table (Fig. 7, Col 11 lines 5-35) and thus, teaching decoding on a pixel by pixel basis. Thus, Satoh teaches taking a matrix of 8 by 8 pixel components, converting each pixel component to frequency domain representation, and using a luminance quantization matrix (part of the larger quantization table comprising luminance component entries and color difference component entries) to compress DCT coefficient matrix for each of the corresponding pixel components. Thus, each entry (a quantization table entry for luminance for e.g.) within the general quantization table (comprising luminance and color difference tables) may include a dominant pixel color component (e.g. in Fig 7 the dominant luminance component 121)

In regards to applicant's amendment of claim 19 reciting "wherein each pixel is represented by a single color entry in the table", as noted above Satoh teaches each pixel component of the matrix of 8 by 8 pixel blocks, which are each decoded utilizing a de-quantization matrix for luminance entries, wherein the de-quantization matrix may be

represented by at least a single color entry in the table for each pixel. (Fig. 7, Col 11 lines 5-35)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 9-11, 13, 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Satoh (6597815)

Regarding claim 1, Satoh teaches decoding on a pixel-by-pixel basis, audio/video data using a table of encoded pixel parameter values, wherein each pixel is represented by an entry in the table and wherein the entry includes a dominate pixel color component. (Col 1 lines 16-59, Col 2 lines 15-18, Col 3 lines 15-47, Col 5 lines 13-19, Col 5 line 50-Col 6 line 65, Col 8 lines 11-22, Col 9 lines 18-26, Col 9 lines 58-64, Col 10 lines 49-60, Col 11 lines 4-61, Figs 5-7) It should be noted that Satoh teaches each of the pixels in an 8 by 8 pixel block corresponds to are to be de-quantized (for decompression purposes) utilizing the 8 by 8 quantization tables in Fig. 7. Thus, the quantization table (entry) for luminance or chrominance color components must include a dominant color component (for example the dominant luminance color component for the quantization table is 121) which corresponds to one of the 64 pixels on the 8 by 8

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pixel block image that is to be decoded as seen in Fig. 7. Furthermore Satoh teaches scaling a set of segment reference pixels comprised of segment reference pixel values according to each entry in the table of encoded pixel parameter values to produce decoded pixels comprised of decoded pixel parameter values. (Col 10 lines 49-60, Col 11 lines 4-61, Figs 5-7) It should be noted that Satoh teaches de-quantization by multiplying the decoded data with the quantization levels included in the quantization tables (scaling of segment reference pixel values according to each entry in the table of encoded pixel parameter values) and thus, producing decoded pixels comprising of decoded pixel parameter values. Furthermore Satoh teaches displaying the decoded pixels (Col 8 lines 36-45, Fig. 5).

Claim 20 is similar in scope to claim 1 except for the recitation of a machine readable medium storing a set of instructions that, when executed by the machine, cause the machine to execute the a method of claim 1. Satoh also teaches this. (Col 22 lines 38-54, Fig. 1)

Claim 19 is similar in scope to claim 1 except for the recitation of wherein each pixel is represented by a single color entry in the table. Again under the same rationale as claim 1, Satoh teaches a segment is a fractional portion of the frame by teaching a frame as image data for one page and a segment as pixel blocks (8 by 8 pixels) divided from the page and decompression to be performed for every pixel block. (Col 1 lines 16-38)

Regarding claim 2, Satoh teaches wherein each set of segment reference pixels corresponds to an encoded segment of a frame. (Col 1 lines 16-59, Col 2 lines 15-18, Col 3 lines 15-47, Col 5 lines 13-19, Col 5 line 50-Col 6 line 65, Col 8 lines 11-22, Col 9 lines 18-26, Col 9 lines 58-64, Col 10 lines 49-60, Col 11 lines 4-61, Figs 5-7) Again, the encoded segment of a frame as taught by Satoh is shown in Figs. 3 and 4.

Regarding claim 3, Satoh teaches a unique set of color pixels for the encoded segment and wherein each segment reference pixel represents a pixel with a most intense dominant pixel color component. (Col 10 lines 49-60, Col 11 lines 4-61, Figs 5-7) Again it should be noted that Satoh teaches for each pixel block (segment) the quantization table (entry) for luminance or chrominance color components must include a dominant color component (for example the dominant luminance color component for the quantization table is 121).

Regarding claim 5, Satoh teaches wherein the table of encoded pixel parameter values further comprises luminance/chrominance. (Col 10 lines 49-60, Col 11 lines 4-61, Fig. 7)

Regarding claim 9, Satoh teaches wherein the table of encoded pixel parameter values further comprises non-dominant pixel color components. (Col 10 lines 49-60, Col 11 lines 4-61, Fig. 7) It should be noted that the quantization table for luminance components for example comprises of a dominant color component 121 and other non-dominant color components (all other values not being 121).

Regarding claim 10, Satoh teaches wherein set of segment reference pixels are comprised of full-scale pixel parameter values. (Col 1 lines 16-59, Col 2 lines 15-18, Col

3 lines 15-47, Col 5 lines 13-19, Col 5 line 50-Col 6 line 65, Col 8 lines 11-22, Col 9 lines 18-26, Col 9 lines 58-64) It should be noted that the pixel block image data (segments) prior to full compression (encoding) may be considered full-scale.

Regarding claim 11, Satoh teaches scaling each of the full-scale pixel parameter values with the each corresponding encoded pixel parameter values. (Col 1 lines 16-59, Col 2 lines 15-18, Col 3 lines 15-47, Col 5 lines 13-19, Col 5 line 50-Col 6 line 65, Col 8 lines 11-22, Col 9 lines 18-26, Col 9 lines 58-64, Figs 3-4) It should be noted that Satoh teaches scaling each of the pixel blocks (8 by 8 pixels) utilizing a corresponding 8 by 8 quantization table to perform scaling. (Figs. 3-4)

Regarding claim 13, Satoh teaches prior to decoding the audio/video data, receiving a file including the table of encoded pixel parameter values and the set of segment reference pixel values. (Col 1 lines 16-59, Col 2 lines 15-18, Col 3 lines 15-47, Col 5 lines 13-19, Col 5 line 50-Col 6 line 65, Col 8 lines 11-22, Col 9 lines 18-26, Col 9 lines 58-64, Figs 3-4) Again it should be noted that prior to decoding, the video data is first received with quantization table for encoding purposes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh. (6597815)

Regarding claim 4, Satoh does not explicitly teach segment reference pixels comprises of red, green, blue and black pixels. Examiner takes official notice that it is well known in the art to have pictures comprising of all 4 of those said pixels. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of representing a picture with red, green blue and black pixels in the system of Satoh because utilizing quantization of color values such as red, green, blue and black components provides the functionality of providing decompression for additional color models to be realized.

Regarding claim 16 Satoh teaches after scaling, communicating the decoded pixels onto a computer to be displayed. However Satoh does not explicitly teach a playback device. Examiner takes official notice that Windows OS supports many existing playback devices (such as windows media player) to synchronize video data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of communicating decoded pixels to a playback device because providing the functionality of synchronizing video content with digital audio content and thus, allowing users to listen to music at real-time can be achieved.

Regarding claim 18, Satoh teaches prior to communicating decoded pixel parameter values to the playback device, converting decoded pixel parameter values to another display format. (Fig. 5) It should be noted that Satoh teaches color space conversion to RGB prior to displaying the image.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh (6597815) in view of Crawford (5416614)

Regarding claim 6, It should be noted that Satoh does teach luminance and chrominance tables utilized for quantization (decompression and compression). Satoh does not explicitly teach segment reference pixel values comprises a dominant color pixel value, nondominant pixel color values, luminance and chrominance values. This is what Crawford teaches. (Col 6 line 9- Col 7 line 59) It should be noted that Satoh teaches entries in a table for R, G, B, Cr, Cb and Y values. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of tables of pixel values comprising a dominant color pixel value, nondominant pixel color values, luminance and chrominance values into the system of Satoh because enabling reversible conversion between two representations of an image in color space where look-up tables are used to represent the conversion between two color space can be achieved (Col 4 lines 21-31) and thus, enabling multiple conversions of image between one color space and another with minimal distortion to the data representation image. (Col 2 lines 40-43)

Regarding claim 7, it should be noted Satoh teaches scaling segment reference pixel's luminance and chrominance values utilizing a quantization table for each component. However Satoh does not explicitly teach utilizing a table for dominant color pixel value, nondominant pixel color values, luminance and chrominance values. This is what Crawford teaches. (Col 6 line 9- Col 7 line 59) It should be noted that Satoh teaches entries in a table for R, G, B, Cr, Cb and Y values. It would have been obvious

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to one of ordinary skill in the art at the time the invention was made to combine the teachings of tables of pixel values comprising a dominant color pixel value, nondominant pixel color values, luminance and chrominance values into the system of Satoh because enabling reversible conversion between two representations of an image in color space where look-up tables are used to represent the conversion between two color space can be achieved (Col 4 lines 21-31) and thus, enabling multiple conversions of image between one color space and another with minimal distortion to the data representation image. (Col 2 lines 40-43) Thus, by utilizing a quantization table for all 4 components, the same scaling (quantization) would be performed on all 4 components.

Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh (6597815) in view of Ladwig. (6247014)

Regarding claim 8, Ladwig teaches where each one of redundant entries (in a table) is utilized by recalling previously values associated with each of the redundant entries. (Col 2 lines 10-12, Col 6 lines 6-11, Fig. 11) It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a pointer for redundant entries (in a table) into the system of Satoh because the pointer may be used as reference to explicitly tie one piece of redunant structure to another, allowing tables and/or lists to be better managed by the user.

Claim 12, 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh (6597815) in view of Koshiba (6933970)

Regarding claim 12, Koshiha teaches synchronizing audio data associated with decoded video parameter values. (Col 33 line 37- Col 36 line 39) It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize synchronizing audio data with decoded data into the system of Satoh because video decoding could be fast or slower than real-time audio requirement and thus improving the quality of playback, playback synchronization can be achieved. (Col 33 lines 38-48)

Regarding claim 17, Koshiha teaches communicating and synchronizing audio data to the playback device. (Col 33 line 37- Col 36 line 39) It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize synchronizing audio data with decoded data into the system of Satoh because video decoding could be fast or slower than real-time audio requirement and thus improving quality of playback, playback synchronization can be achieved. (Col 33 lines 38-48)

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh (6597815) in view of Basso. (6751623)

Regarding claim 14, Basso teaches a header comprised of video frame information and audio information. (Col 2 lines 53-65, Col 5 lines 47-63, Col 6 lines 23-32, Fig.1) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of a header into the system of Satoh because allowing access to important information about access units without having to parse the actual underlying encoded media data can be achieved. (Col 5 lines 59-63)

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh (6597815) in view of Basso (6751623) in further view of Boice. (6999511)

Regarding claim 15, Boice teaches using a header to determine data locations within the file, including the beginning and end of the values. (Col 10 lines 35-48, Fig. 10) It would have been obvious to combine the teachings of a header to determine data locations within the file, including the beginning and end of the values into the system of Satoh in order to determine data locations including beginning and end of encoded pixel parameter values and corresponding segment reference pixel values because providing to the user additional information about the image such as the beginning and end of the image file can be realized.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN K. XU whose telephone number is (571)272-7747. The examiner can normally be reached on 8:30AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin K Xu/
Examiner, Art Unit 2628
5/20/08

/K. K. X./

/Kee M Tung/

Supervisory Patent Examiner, Art Unit 2628